

CLAIMS

We claim:

1. An inspection device including:
5 a light source;
 a pellicle beamsplitter for receiving light from the light source and
redirecting said light;
 an aperture array for receiving light from the pellicle beamsplitter;
 a dual telecentric object reimager including a plurality of lenses;
10 a telecentric camera imager including a plurality of lenses; and
 a camera for collecting focused light.

2. A process of inspecting a surface including bumps thereon, the
process comprising:
15 scanning a surface using optics and a camera capable of
determining light intensity for each pixel viewed;
 measuring the light intensity at each pixel at a first elevation;
 measuring the light intensity at each pixel at a second elevation;
and
20 determining the elevation of the surface using a Gaussian curve
based upon the light intensities measured at the first and second elevations at
each pixel .

3. The process of claim 2 further comprising:
25 scanning at least particular portions of a surface believed to
contain protrusions extending outward from the surface using optics and a
camera capable of determining light intensity for each pixel viewed;
 measuring the light intensity at each pixel at a third elevation;
 measuring the light intensity at each pixel at a fourth elevation; and
30 determining the elevation of the protrusions using a gaussian curve
based upon the light intensities measured at the third and fourth elevations at
each pixel .

4. The process of claim 3 further comprising:
35 determining the height of a protrusion by calculating the difference
between the elevation of a protrusion and the elevation of the surface.

5. The process of claim 2 wherein an inspection device is used to perform the scanning and includes:

- a light source;
- 5 a beamsplitter for receiving light from the light source and redirecting said light;
- an aperture array for receiving light from the pellicle beamsplitter;
- at least one reimager; and
- a camera for collecting focused light.

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